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THE OPPONENT'S CONCESSION RATE ON BEHAVIOR IN
NEGOTIATION

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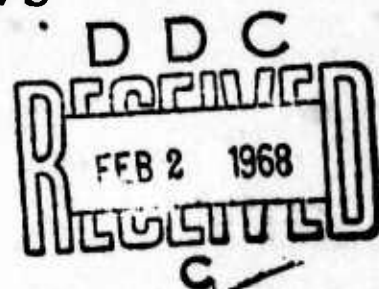
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**DEPARTMENT OF PSYCHOLOGY
STATE UNIVERSITY OF NEW YORK
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**Technical Report Number 3
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The Effect of Time Pressure, Time Elapsed, and the Opponent's
Concession Rate on Behavior in Negotiation¹

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Eighty students were run in a laboratory paradigm of negotiation resembling that employed by Siegel and Fouraker. Time pressure produced, on the first trial, less ambitious goals, lower levels of demand and less bluffing. Over the later trials, level of demand and amount of bluffing were reduced at a diminishing rate, but goals remained unchanged. Neither time pressure nor the other negotiator's rate of concession affected the rate of change in demand or bluffing over time. Several items of evidence suggested the presence of substantial wishful thinking about the other negotiator's goals.

INTRODUCTION

The type of negotiation studied in this experiment involves two parties who must agree on one of a set of alternatives or face the consequences of no agreement. The order of preference among the alternatives is completely reversed for the two parties, such that alternatives most preferred by one party are least preferred by the other.

The behavior of a negotiator typically involves communication of a series of offers or demands. At any point in the negotiation, four potentially measurable aspects of his behavior can be distinguished:

(a) Level of demand, i.e., the value of his current offer, either on his own scale of value or that of the other negotiator.²

(b) Size of concession, i.e., the extent to which his current offer departs in value from his previous offer. A concession is positive if his current offer is worth less to him (and, hence, more to the other negotiator) than his previous offer, and negative if it is worth more.

(c) Goal, i.e., the value of the alternative to which he aspires. At least two kinds of goal have been distinguished in the literature on negotiation: the forward goal, i.e., the level of value a negotiator realistically hopes to achieve from the negotiation, and the minimal goal, i.e., the level of value he is minimally willing to accept in the negotiated agreement.³ The forward goal has been variously called the "level of aspiration" (Siegel and Fouraker, 1960), "target point" (Walton and McKersie, 1965), and "comparison level" (Kelley, 1966). The minimal goal has been variously called the "fall-back position"

(Pruitt, 1962), "minimum disposition" (Ikle' and Leites, 1962; Sawyer and Guetzkow, 1965), "concession point" (Harsanyi, 1962), "equilibrium point" (Stevens, 1963), "resistance point" (Walton and McKersie, 1965), "break-off point" (Kelley, 1966), and "comparison level for alternatives" (Kelley, 1966). Ikle' and Leites (1962) point out that the minimal goal (and by extension the forward goal) is more realistically viewed as a range of values than as a single point on the value scale. However, for analytical purposes, it can probably be treated as a point, with little loss of generality. Two authors have postulated a causal relationship between goal and level of demand. Siegel and Fouraker (1960) present evidence supporting the assumption that level of demand is a monotonic function of the forward goal. Harsanyi (1962) suggests that the same relationship exists between level of demand and the minimal goal.

(d) Extent of bluffing, i.e., the difference in value between the current level of demand and the current minimal goal. The more the negotiator demands in comparison to what he is actually willing to accept, the more extensive his bluffing. Similar concepts of bluffing have been advanced by Harsanyi (1962) and Stevens (1963).

The purpose of this experiment was to investigate the effect of time pressure, elapsed time, and the other negotiator's rate of concession on the four aspects of behavior described above. The hypotheses were based on an analysis of the perennial dilemma that faces negotiators between taking a "tougher" and a "softer" approach.

A tougher approach implies setting more ambitious goals, making more extreme demands, bluffing more and making fewer concessions. A softer approach implies the opposite. In moderation, each approach appears to have its virtues. On the one hand, assuming that an agreement will be reached, moderately tough behavior seems instrumental to getting more for oneself out of the agreement.⁴ The more one demands and the more slowly he concedes, the less likely he is to overshoot the opponent's minimal goal, i.e., to make concessions beyond the point to which the opponent would eventually have been willing to retreat. Furthermore, moderately tough behavior may discourage the opponent and cause him to lower his goals and, hence, to reduce his demands. Failure to be moderately tough may be seen by the opponent as a sign of "weakness," causing him to raise his demands (Stevens, 1963). On the other hand, moderately soft behavior seems to advance the objective of reaching an agreement, since it is clear that agreement can only be reached if one, and most likely both, of the negotiators are willing to make concessions.

By "time pressure" is meant a perception on the part of both negotiators that the negotiation is about to be terminated whether or not agreement is reached. Hypothesis 1, which concerned time pressure, was as follows:

Greater time pressure will produce a softer approach to negotiation, involving (a) lower level of demand, (b) larger concessions, (c) less ambitious minimal goals, and (d) less bluffing.

This hypothesis can be deduced in several ways: Greater time pressure presumably accentuates the perceived importance of reaching agreement and, hence, should lead to a softer approach. Furthermore, greater time pressure makes less workable the tough strategy of holding out in order to discourage the other negotiator, because this strategy takes time to produce the desired effect. In addition, a softer approach may be safer under greater time pressure, because the other negotiator (knowing also that the pressure is on) is less likely to perceive this as a sign of weakness or (according to Stevens, 1963), if he does so perceive it, has less time to exploit this perception.

Hypothesis II, which concerned elapsed time, was as follows:

As time elapses in a negotiation, a progressively softer approach will be taken, involving (a) lower level of demand, (b) larger concessions, (c) less ambitious minimal goals, and (d) less bluffing.

This hypothesis follows from hypothesis I and the simple assumption that perceived time pressure increases as time elapses. Hypothesis II has also been stated by Harsanyi (1962) and Stevens (1963). Kelley's (1966) data exhibit declining demand over time, in support of hypothesis IIa. Kelley also found a decline over time in bluffing. However, since the minimal goal in Kelley's study was objectively specified in the rules of the task, this finding is completely implied by the declining level of demand and does not, therefore, constitute an independent test

of hypothesis IId. Such a test requires measurement of the minimal goal, as will be done in the present study, rather than specification of that goal.

Hypothesis III postulated an interaction between time pressure and the other negotiator's concession rate, as follows:

Under mild time pressure, a tougher approach will be taken the greater the other negotiator's concession rate. Under acute time pressure, this relationship between toughness and the other negotiator's concession rate will be less marked and may even be reversed, such that a softer approach will be taken the greater the other's concession rate.

This hypothesis was suggested by some theoretical ideas put forward by Stevens (1963) in his analysis of collective bargaining. Stevens distinguishes between an "early" and a "late" stage of negotiation. The early stage is characterized by mild time pressure and the late stage by acute time pressure (because a strike or lockout deadline is rapidly approaching). Stevens argues that in the early stage, a concession is often viewed as a sign of weakness and elicits tough behavior in return. On the other hand, in the late stage, when both parties are anxious to reach agreement, one party's concession often elicits a return concession from the other party who hopes to start an "arm-in-arm" progression of reciprocal concessions toward agreement.

(p. 106). Thus the tough reaction to concessions from the other party which is found in the early (mild time-pressure) stage is muted or even reversed in the late (acute time-pressure) stage.

A related rationale for the third hypothesis can be stated as follows: Under mild time pressure, the other negotiator is expected to exhibit a low concession rate. If he does not do so, this is seen as a sign of weakness and a tough approach is taken toward him. Under acute time pressure, on the other hand, the other negotiator is expected to exhibit a high concession rate. Hence, such behavior is less likely to be seen as a sign of weakness than as a sign of reasonableness. As a result, it does not motivate such tough counter moves. Furthermore, under acute time pressure, slow concessions from the other negotiator may even elicit negative feelings toward him. These feelings may, in turn, produce a tougher approach, completely reversing the relationship between concession rate and toughness that was postulated for the mild time-pressure condition.

The task employed in the present study was adapted from one used by Siegel and Fouraker (1960). It involves negotiation between buyer and seller over the price of a commodity. The only communication permitted is a periodic statement of offer. Such a task greatly simplifies the usual negotiation situation. Because there is only one commodity, alternatives involving packages or trades are not possible. New alternatives cannot be developed. Of the myriads of strategies that are possible in most negotiations (e.g., persuasive communication

and threat) the only ones possible here involve manipulating one's own demand. These limitations, while certainly reducing the exploratory potential of this study and possibly reducing the generality of its findings, were deemed necessary to permit a carefully controlled examination of the interrelations among the variables studied.

METHOD

Subjects

Eighty male freshmen and sophomores at the University of Delaware served as subjects. They were recruited from classes on a voluntary basis to serve in a "bargaining study." Three other subjects were run but discarded, two because of irregularities in the experimental procedure and one because he was unable to comprehend the instructions.

Apparatus

The experimental room contained four booths made out of folding screens in such a way that no subject could see any other subject. Each booth contained a table and chair arranged so that the seated subject faced the center of the experimental room. The screen in front of the subject contained a slot at table height through which he could pass messages back and forth to the experimenter.

Experimental Task

The instructions informed the subject that he would be exchanging offers about the wholesale price of a product with one of the other students in the room. The product was unnamed but was said to retail for \$9 to \$10. Ostensibly, one member of the bargaining pair would act as buyer and the other as seller. In actual fact, the subject was always the seller, and the experimenter played the role of buyer, making a programmed set of offers.

On the table in front of the subject was a payoff schedule which showed the possible prices at which the product could be exchanged and

the profit associated with each price. The prices on this schedule ranged in 10¢ steps from \$2.50 to \$15 and the associated payoffs in 10¢ steps from -\$2.75 to \$9.75. The zero profit point lay between \$5.20 and \$5.30. The reason for including so many absurdly high and absurdly low prices was to make it difficult for the subject to conclude from the physical appearance of the payoff schedule ~~what the experimenter~~ thought was the "best agreement." Such otherwise salient points as the middle of the schedule were hard to locate and were likely to be quite absurd.

The subjects were told that the other negotiator's payoff schedule contained the same prices but that his profits ran in the opposite direction from their own, i.e., they were doing well when he was doing poorly and vice versa. They were also told that it was futile to try to guess where the other negotiator's zero profit ~~was located~~. To emphasize this point, a chart was posted on the partition in front of them, showing ten possible payoff schedules with the purportedly associated probability that the other negotiator had each.

The subjects were told that they and the other negotiator would alternate making "offers." An offer was made by writing on an "offer slip" the price currently desired and passing this slip to the experimenter. Each offer was presumably recorded by the experimenter and then passed to the other negotiator, who would then make an offer which was recorded and passed to the subject, etc. Negotiation presumably ended when one negotiator accepted the other's most recent offer.

Offers made and received were to be recorded by the subject on a special record form which sat on the table before him.

The subjects were told that they would be paid in cash the profit associated with the price on which agreement was finally reached. They were urged to make as much money for themselves as they could. They were also informed that an agreement had to be reached for any money to be made.

Variables and Design

Two variables were manipulated, each with two levels: time pressure and the other negotiator's concession rate. The third variable, time-elapsed, was operationally defined as the number of trials since the beginning of the negotiation.⁵

The time-pressure (TP) manipulation was produced by instructions. The number of offers which the subject would be permitted to make was said to be determined by chance:

You were shown a round wire cage with black and white balls in it. The experimenter will spin this cage each time after you have sent your offer and each time after the other student has sent his offer. If a black ball falls into the cup, the negotiation will be stopped and neither you nor the person with whom you are negotiating will receive any money.

In the acute-TP condition, this statement was followed by:

The cage contains three black balls and 21 white ones. This means that there is a one out of eight chance that a black ball will come up each time the experimenter spins the cage. But over a series of spins, the chance of being eliminated is quite a bit larger. For example, in your first five turns, the cage will be spun ten times, five for you and five for the other student. The chance that a black ball will turn up at some time in these ten spins is seven out of ten. Thus, the chance of your getting through even five turns is not too great, only three in ten. The chance of getting through ten turns is really small...less than one in ten.

In the mild-TP condition, it was followed by:

The cage contains one black ball and 49 white ones. Thus the chance of the negotiation ending on any trial is very small. The chance of being eliminated over a number of trials is larger but still not very large.

In accordance with the instructions, a bingo cage was spun twice on each trial. Regardless of which color ball actually fell into the cup, a note was sent to the subject saying that the white ball had come up and that the negotiation would continue.

Concession rate (CR) was controlled by the programmed set of offers that was sent to the subject. The two sets of offers were as

follows:

Trial number		1	2	3	4	5	6
Low-CR condition	Price offered	\$3.40	3.50	3.70	3.80	3.90	4.00
	S's profit	- 1.75	-1.65	-1.45	-1.35	-1.25	-1.15
High-CR condition	Price offered	\$3.40	4.00	4.40	5.00	5.50	5.90
	S's profit	- 1.75	-1.15	- .75	- .25	.25	.65

It should be noted that the opening set was identical in both conditions. Thereafter, the "other negotiator's" offers changed at different rates. Actually, the first point at which the CR manipulation could have an effect on behavior was the third offer, since the subject always made the first offer on a trial.

A two-by-two factorial design was employed, with 20 subjects assigned randomly to each of the four cells.

Procedure and Questionnaire

The subjects were brought into the room and seated in the booths in such a way that no subject ever saw another subject. After all had been seated, the instructions were read. Then a short practice negotiation was held, where each subject received and sent two offers. The subject did not make a free choice during the practice session but was told what offers to make. When all questions had been answered about the mechanics of the procedure, the actual negotiation started. Each subject was individually notified that he should make the opening offer. (He had earlier been led to believe that a chance determination would be made of which negotiator went first.)

From the second trial on, every time the subject filled out an offer slip and sent it to the experimenter, he was given a questionnaire (which will subsequently be called the "first questionnaire"). This contained an open-ended invitation to explain what he was doing and a number of objective questions about such issues as the lowest price which he would be willing to accept if offered by the other negotiator on his next turn. When the subject returned the completed questionnaire, he received a note saying that a white ball had come up on both spins and that the negotiation would continue. Next he was given the "other negotiator's" return offer. Then he was asked to complete another questionnaire (the "second questionnaire") concerning his reactions to the other negotiator, which included 12 semantic differential scales. This procedure was repeated for each of the remaining trials.

Only six trials were run, because pilot data had revealed that subjects would be lost, through accepting the other negotiator's offer, if more trials were run in the high concession-rate condition. After six trials, negotiation was terminated by sending to the subject a note indicating that the other negotiator had accepted the subject's last offer. The subjects were then paid and dismissed individually in such a way that they could not see one another. This latter precaution was taken so that they would not begin to compare notes, discover the deception, and talk about it to friends who might later participate in the experiment.

RESULTS

Bargaining Behavior as a Function of Time Pressure and Time (Trials)

Elapsed

To check on the effectiveness of the time-pressure (TP) manipulation, an item in the first questionnaire asked for a rating of confidence that "the negotiation would not be stopped for the next few trials." The mean confidence rating under mild TP was 5.13 (on a 7-point scale) and under acute TP 2.76, a highly significant difference in the expected direction ($F = 102.29$, $df = 1,76$, $p < .001$). There was also a significant decrease in confidence over trials ($F = 14.40$, $df = 4,304$, $p < .001$). This suggests that perceived time pressure is an increasing function of time elapsed, an assumption underlying the derivation of hypothesis 1i.

Figure 1 shows the mean level of demand made on each trial under the four experimental conditions. An analysis of variance for these data, covering trials 3 through 6, is shown in Table 1.⁶ As postulated in hypothesis 1a, a highly significant main effect was found for TP, involving a greater level of demand under mild than under acute TP. Hypothesis 1ia gained support from the significant decline over trials that was found in level of demand. This decline essentially indicates that regular concessions were being made. The shape of the decline over trials did not support hypothesis 1ib, which predicted that the size of concessions would increase over trials. Instead, the earlier

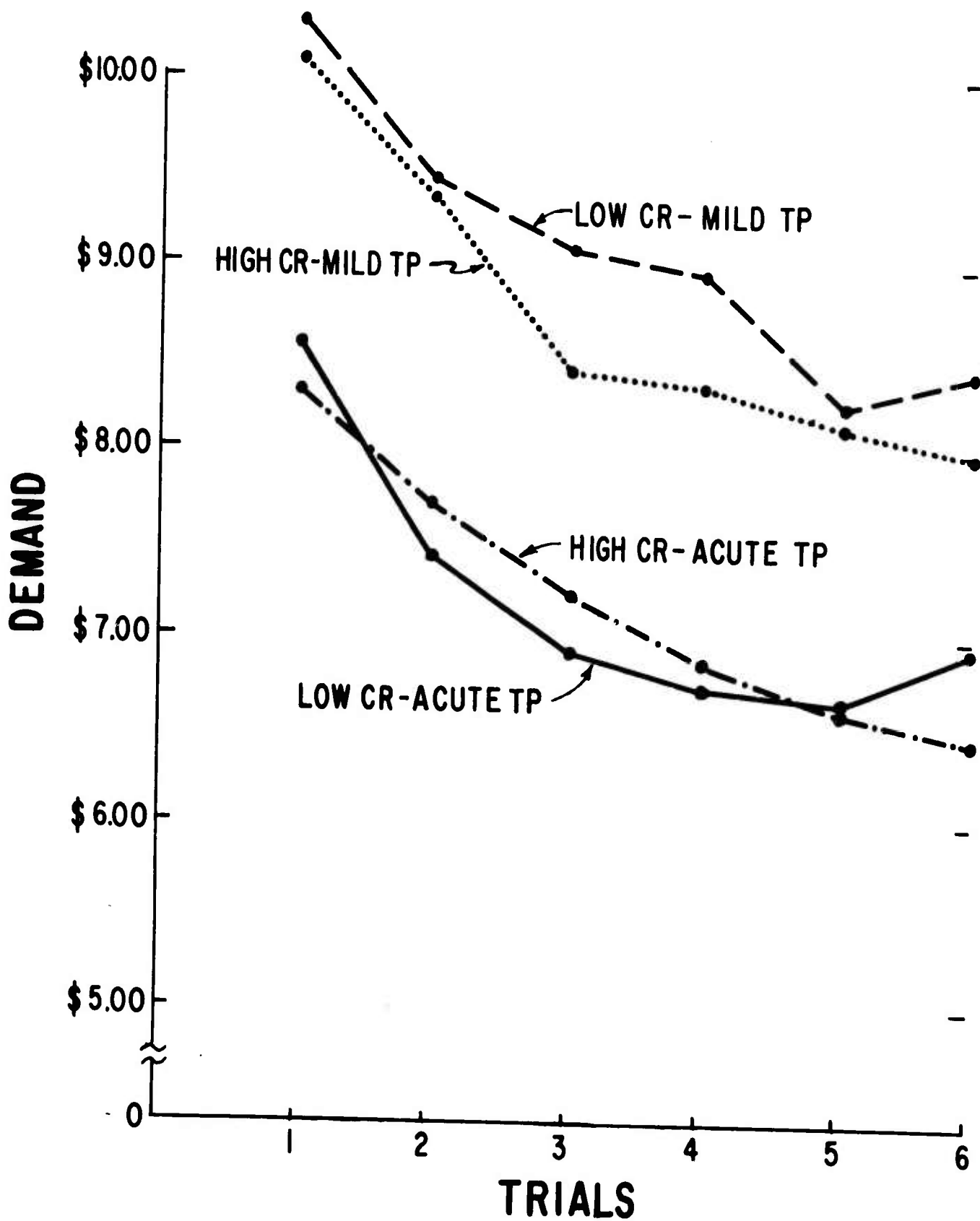


FIGURE 1. LEVEL OF DEMAND, A HIGHER PRICE IS MORE FAVORABLE TO THE SUBJECT.

Table I
Analysis of Variance for Log Transformation
of Demand on Trials 3 to 6

<u>Source</u>	<u>d.f.</u>	<u>Mean Square</u>	<u>F</u>	<u>P</u>
<u>Between Ss</u>				
Time pressure (A)	1	.6671	19.11	<.001
Concession rate (B)	1	.0001		
A x B	1	.0108		
Ss w. groups	76	.0349		
<u>Within Ss</u>				
Trials (C)	3	.0237	9.88	<.001
A x C	3	.0032	1.33	n.s.
B x C	3	.0008		
A x B x C	3	.0021		
C x Ss w. groups	228	.0024		

concessions were larger than the later ones. The absence of a significant interaction between TP and trials suggests that, contrary to hypothesis 1b, the size of concessions was not affected by TP. In other words, the rate at which demand declined over trials was not a function of TP.

One item in the first questionnaire required a statement of "the lowest price which you would be willing to accept if offered by the other student in his next turn." This can be interpreted as a measure of minimal goal. The results for this question are shown in Figure 2, and an analysis of variance of these results (over trials 3 to 6) is summarized in Table 2. As postulated in hypothesis 1c, a significant TP effect was found, involving a higher minimal goal under mild than under acute TP. The slight decline in minimal goal over trials which can be seen in Figure 2 did not approach statistical significance. Hence, hypothesis 11c was not confirmed.

An index of bluffing was constructed by subtracting the measure of minimal goal from the measure of demand. This index reflects the extent to which a higher price was being asked than was minimally acceptable. The reader can reconstruct this index for each condition by comparing the data shown in Figures 1 and 2. There were only two statistically significant findings for this index:⁷ (a) As predicted in hypothesis 1d, bluffing was more pronounced under mild than under

Table 2
Analysis of Variance for Own Minimally Acceptable Price

<u>Source</u>	<u>d.f.</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
<u>Between Ss</u>				
Time pressure (A)	1	75.4176	19.42	<.001
Concession rate (B)	1	5.7165	1.47	n.s.
A x B	1	4.0973	1.06	n.s.
Ss w. groups	76	3.8828		
<u>Within Ss</u>				
Trials (C)	3	.3382		
A x C	3	.0346		
B x C	3	.3336		
A x B x C	3	.0471		
C x Ss w. groups	228	.3639		

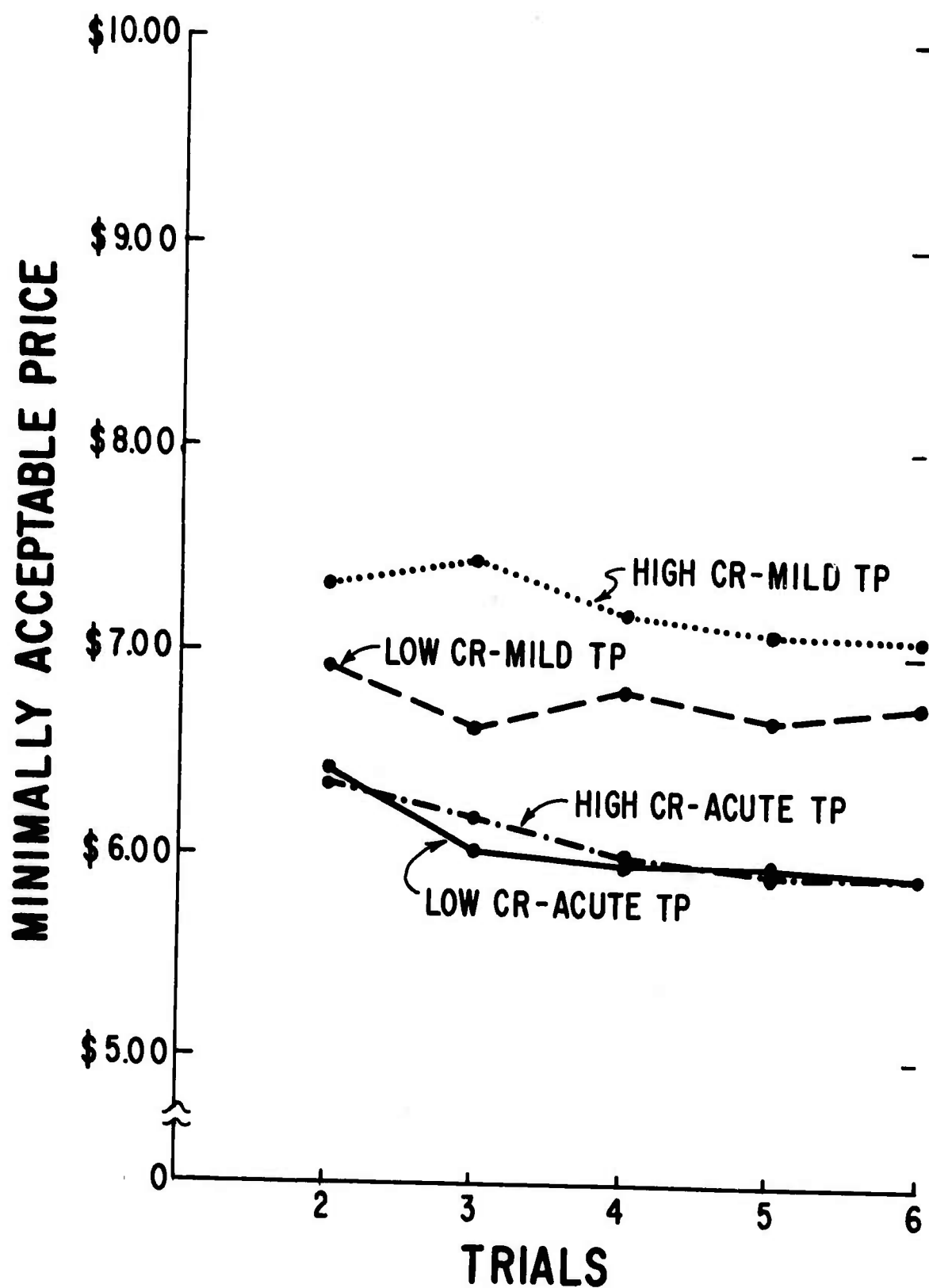


FIGURE 2. MINIMALLY ACCEPTABLE PRICE. A HIGHER PRICE IS MORE FAVORABLE TO THE SUBJECT.

acute TP ($F = 7.89$, $df = 1,76$, $p < .01$). (b) As predicted in hypothesis mild, bluffing diminished over trials ($F = 7.52$, $df = 4,304$, $p < .001$). The latter finding reflects the fact that demand declined over trials while minimal goal remained relatively constant. In addition, the interaction between TP and trial nearly reached significance ($F = 2.09$, $df = 4,304$, $p < .10$), indicating that bluffing declined somewhat more rapidly under mild than under acute TP.

Bargaining Behavior as a Function of the Other Negotiator's Rate
Of Concession

Two questions were asked to assess awareness of the other negotiator's concession rate (CR). One, which appeared on the first questionnaire, measured the perceived probability of a concession from the other negotiator: "If he does not accept your last offer, how likely do you think it is that his next offer will be more advantageous to you than his last offer?" The average perceived likelihood under low CR was 4.60 (on a 7-point scale) and under high CR, 5.54, a difference that was in the expected direction and quite significant ($F = 14.97$, $df = 1,76$, $p < .001$). The second question also appeared in the first questionnaire: "Please guess what the other student's next offer will be." An index of the size of concession expected from the other negotiator was constructed by subtracting the other negotiator's actual current level of demand from the answer to this question. The average value of this index under the high CR condition was 40¢, indicating expectations of a sizeable positive concession. Under the

low CR condition, it averaged -18¢, indicating that the other negotiator was expected to take a somewhat tougher position on the next trial. The difference between these values was also in the expected direction and statistically highly significant ($F = 112.57$, $df = 1,76$, $p < .001$).

Despite the apparent awareness of CR, this variable had no discernible effect on bargaining behavior. Figures 1 and 2 and Tables 1 and 2 reveal no appreciable main effect of CR on level of demand or minimal goal and no appreciable interaction between CR and either TP or trials.⁸ Nor did CR have any appreciable effect on bluffing. Clearly, hypothesis III is not supported in any way.

Perceptions of the Other Negotiator

Hypothesis III was based on certain assumptions about the effect of the experimental conditions on perceptions of the other negotiator. In light of the failure of this hypothesis to receive support, it becomes particularly important to examine the results available on these perceptions.

One assumption was that, under acute as opposed to mild TP, a more rapid rate of concession would be expected from the other negotiator. This assumption was not borne out by the data. The results revealed no appreciable TP effect on the index described earlier of the other's perceived likelihood of concession. The effect of TP on the anticipated size of the other's next concession was opposite to that expected. Under acute TP, the other negotiator was expected to concede, on the

average, 7¢; while under mild TP, he was expected to concede 15¢ ($F = 5.18$, $df = 1,76$, $p < .05$).

Another assumption undergirding hypothesis III was that the other negotiator would be perceived as "weaker" if he made rapid concessions under mild TP than if he made rapid concessions under acute TP. Three of the semantic differential items in the second questionnaire are objectively related to weakness: "tenacious-yielding," "hard-soft" and "strong-weak." The ratings on these scales were found to be highly intercorrelated (the average r was .80), confirming our suspicion that they were measuring the same perception. Therefore, an index of "perceived weakness" was derived by averaging the ratings on these three scales. The results for this index are shown in Table 3 (higher numbers imply greater perceived weakness). As might be expected, the other negotiator was seen as considerably weaker under the high than under the low CR condition ($F = 19.21$, $df = 1,76$, $p < .001$). (This further confirms the effectiveness of the CR manipulation.) The interaction between TP and CR was in the predicted direction, i.e., the difference in perceived weakness between high and low CR was greater for mild than for acute TP. However, this result did not reach an acceptable level of significance ($F = 1.75$, $df = 1,76$, $p < .25$).

A third assumption was that more would be demanded from the other negotiator the weaker he was perceived to be. This was tested by correlating level of demand against perceived weakness on each of

Table 3
Perceived Weakness of the Other Negotiator

		Concession Rate	
		High	Low
Time Pressure	Acute	3.48	2.84
	Mild	3.91	2.49

n.b. The entries in each cell are averaged
over five judgments from 20 subjects.

trials 3 to 6 and averaging these correlations across trials. The results were as follows: low CR-mild TP, $r = -.05$; low CR-acute TP, $r = .09$; high CR-mild TP, $r = .14$; high CR-acute TP, $r = .48$. Hence, the assumption was confirmed only for the high CR-acute TP condition (for that correlation, $p < .05$).

A further assumption was that, under acute TP, especially negative feelings would be directed at the other negotiator when his concession rate was slow. This was tested with an index based on the following question from the second questionnaire, "How pleased are you with this offer from the other student?" The results, averaged over trials 2 through 6, are shown in Table 4. As might be expected, the subjects were more pleased under the high than under the low CR condition ($F = 64.33$, $df = 1,76$, $p < .001$), though it should also be noted that they were not particularly pleased under either condition, the highest average level of pleasure (4.18) being approximately at the neutral point of the 7-point scale. Also they were somewhat more pleased under mild than under acute TP ($F = 5.12$, $df = 1,76$, $p < .05$). This may have resulted from a feeling of greater urgency under acute TP, leading to greater frustration with the other negotiator's behavior. However, the crucial assumption of an interaction between TP and CR was not supported ($F = .60$).

A final assumption upon which hypothesis III was based was that a higher level of demand would be directed at the other negotiator

Table 4
Extent of Pleasure with the Other Negotiator's Offer

		Concession Rate	
		High	Low
Time Pressure	Acute	3.44	1.68
	Mild	4.18	2.04

n.b. The entries in each cell are averaged over
five judgments from 20 subjects.

the greater the displeasure with his behavior. This assumption was tested by means of correlations between pleasure with the other's latest offer and level of demand. Averaged over trials, these correlations were as follows: low CR-mild TP, $r = .07$; low CR-acute TP, $r = -.03$; high CR-mild TP, $r = -.12$; high CR-acute TP, $r = .46$. Again, this assumption was borne out only in the high CR-acute TP condition ($p < .05$).

Although none of the hypotheses was based on assumptions about the perceived minimal goal of the other negotiator, the data on this variable are useful for diagnosing what happened in this experiment. The following item was included in the second questionnaire, "What do you guess is the highest price which the buyer would be willing to accept on his next turn if you offered it to him?" Results for this question are shown in Figure 3 and an analysis of variance of these results in Table 5. (Since the other negotiator was the buyer, a lower price in Figure 3 indicates that he was seen as having a tougher, more ambitious minimal goal.) The main effect for CR and the interaction between CR and trials reveal a growing recognition of the soft position being taken by the high CR opponent and, to a lesser extent, the tough position being taken by the low CR opponent.⁹ (This further confirms the effectiveness of the CR manipulation.) The effect of TP on perceived minimal goal mirrors the findings mentioned earlier for the anticipated size of the other's next concession: under mild TP, the other negotiator

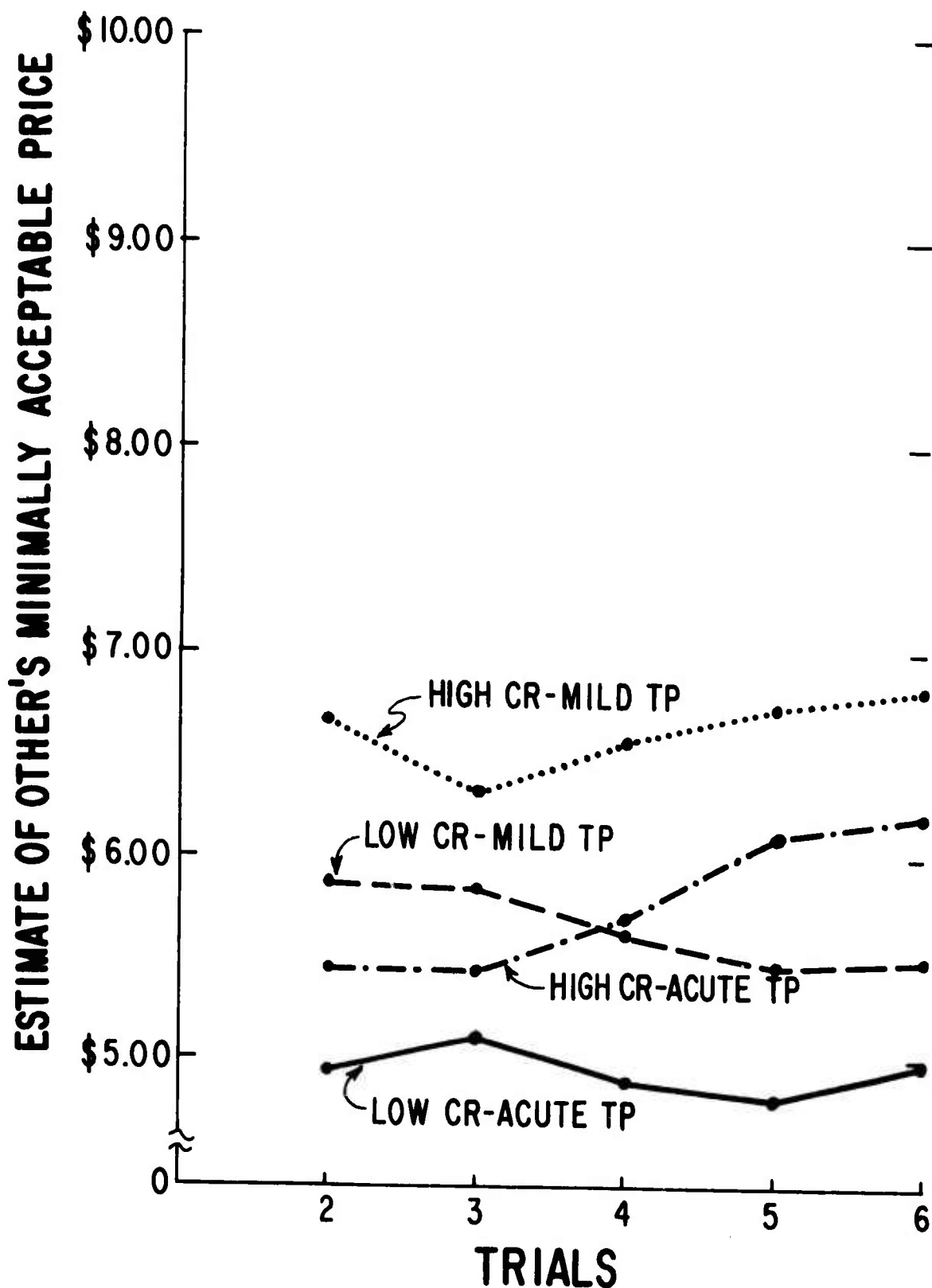


FIGURE 3. ESTIMATE OF THE OTHER NEGOTIATOR'S MINIMALLY ACCEPTABLE PRICE. A HIGHER PRICE IS LESS FAVORABLE TO THE OTHER NEGOTIATOR AND, HENCE, MORE FAVORABLE TO THE SUBJECT.

Table 5
Analysis of Variance for Estimates of the
Other Negotiator's Minimally Acceptable Price

<u>Source</u>	<u>d.f.</u>	<u>Mean Square</u>	<u>F</u>	<u>p</u>
<u>Between Ss</u>				
Time Pressure (A)	1	63.8161	16.86	<.001
Concession rate (B)	1	82.5645	21.81	<.001
A x B	1	.2606		
Ss w. groups	76	3.7861		
<u>Within Ss</u>				
Trials (C)	4	.5771	1.02	n.s.
A x C	4	.6999	1.23	n.s.
B x C	4	2.6053	4.59	<.01
A x B x C	4	.0526		
C x Ss w. groups	304	.5679		

was seen as having a less ambitious minimal goal than under acute TP. This completely reverses the findings on the effect of TP on the subjects' own minimal goal. Under mild, as opposed to acute TP, the subjects themselves had more ambitious goals yet saw their opponent as having less ambitious goals. Since the opponent was portrayed as another subject, this finding indicates that our subjects had little insight into the psychology of their opponent. This theme will be further elaborated in the discussion section.

DISCUSSION

The main intervening variable employed in formulating the initial hypotheses was toughness (vs. softness) of approach. This variable was assumed to be manifested in four ways: level of demand, size of concessions, height of minimal goals and extent of bluffing. In retrospect, this formulation appears simplistic, because these four "manifestations" were differently affected by the conditions of the experiment. For example, both time pressure (TP) and elapsed time had an effect on level of demand and extent of bluffing, but only TP affected the height of minimal goals. Furthermore, the size of concessions was unaffected by TP and affected in the opposite direction from prediction by time elapsed (i.e., larger concessions were made at first and smaller ones later on). In summary, the toughness variable, as originally conceived, appears to lack convergent validity (Campbell and Fiske, 1959). The following is an effort to reconceptualize what happened in this experiment.

A distinction between the first trial and later trials seems worthwhile. It may be that on the first trial we can talk meaningfully about variations in "toughness" of approach. Mild, as opposed to acute, TP appears to have produced a tougher opening gambit, with more ambitious initial goals, higher demands and more bluffing. Thereafter, toughness does not appear to have been systematically altered, as shown by the stability over time of the minimal goal (Figure 2). Instead, we find

what appears to have been a standard set of concessions (i.e., reduced demand) which consisted essentially of progressively reduced bluffing. These concessions were unaffected by TP or the other negotiator's concession rate (CR). Indeed, they appear to have been quite similar in size from subject to subject, as is shown by the very high correlations between demand on the first trial and demand on later trials given in Table 6. (These correlations indicate that, on the average, initial demand accounts for 67% of the between-subjects variance in subsequent demand.) On the basis of their behavior in later trials, one might almost describe our subjects as "automatons," tuning out external stimuli and new ideas, and moving mechanically a standard distance from the position adopted on the first trial.

The absence of reaction to the other negotiator's CR is particularly mystifying. It is clear from the questionnaire results that our subjects were aware of this CR and had appropriate internal reactions, yet this CR had no effect on their bargaining strategies. Harsanyi (1962) suggests that a "rational" bargainer will base his own minimal goal, and therefore his level of demand, on what he perceives to be the other negotiator's minimal goal. A comparison of Figures 1, 2 and 3 suggests that, in this sense at least, our negotiators were far from "rational." Although they continually re-evaluated their estimates of the other's minimal goal in the light of his CR (Figure 3), they stuck rigidly to their own initial minimal goal (Figure 2) and did not respond behaviorally

Table 6
Correlation Coefficients Between Demand
on the First Trial and Current Demand

<u>Condition</u>	<u>Trial</u>			
	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Low CR - Mild TP	.86	.89	.88	.84
Low CR - Acute TP	.70	.70	.64	.66
High CR - Mild TP	.82	.92	.89	.87
High CR - Acute TP	.85	.62	.86	.51

n.b. $\underline{p} < .01$ for all coefficients. $\underline{N} = 20$.

to his CR (Figure 1).

High positive correlations were found, across subjects within conditions, between own minimal goal and estimates of the other's minimal goal. Averaged over the last four trials, these correlations were: low CR-mild TP, .72; low CR-acute TP, .49; high CR-mild TP, .59; and high CR-acute TP, .70 (all significant beyond the .01 level). These correlations might be taken as evidence that our subjects were behaving "rationally" in Harsanyi's sense. However, in light of the evidence reviewed in the last paragraph, it seems more parsimonious to attribute these correlations to wishful thinking, i.e., a tendency to think that the other is willing to accept what one wants him to accept. Further evidence of wishful thinking can be seen in a comparison of the effects of TP on own minimal goal and estimates of the other negotiator's minimal goal. While the subjects themselves developed more ambitious goals under mild as opposed to acute TP (Figure 2), they perceived the other negotiator as having less ambitious goals (Figure 3).

In summary, we find our subjects apparently reacting rather mechanically after the first trial, ignoring "rational" implications of the other negotiator's CR for their goals and behavior, and engaging in wishful thinking about the other negotiator's goals. One wonders whether this pattern is characteristic of negotiation behavior in general or only of our subject pool or laboratory situation. One way to answer this question is by comparing our findings with those from other studies. Unfortunately there are no statistical field studies related to this research, but there are three other related experimental studies. Liebert, Smith, Keiffer and

Hill (1967) found that first-trial behavior was affected by the other negotiator's first offer¹⁰ but that subsequent behavior was unaffected by the other negotiator's CR. These findings resemble our own in their implication of behavioral lability on the first trial and rigidity on subsequent trials. Two other experiments (Bartos, 1964, and Caggiula, 1965) suggest that, contrary to our findings, demand is responsive to the other negotiator's CR. (Both found that more concessions were made when the other negotiator was tougher.) However, Bartos' CR effect was so weak that he concludes that most of his subjects were "introverted," i.e., like our subjects appeared to be, unresponsive to the environment. Caggiula employed instructions that stressed the importance of developing a positive relationship with the other negotiator and may have made the subjects feel that they had to compromise with him on his terms. Hence, these findings are not clearly contradictory to ours.

If we take the pessimistic position that our subjects and situation were not typical of negotiation in general, three possible sources of atypicality can be postulated: (a) We ran only six trials. This might explain the failure to react behaviorally to CR. Perhaps people gather information at first in a negotiation and only apply it to their behavior later. It follows that our subjects might have reacted to CR if we had let them go on past six trials. (b) Our subjects were mostly naive with respect to formal bargaining. Hence, they may not have had reality-based skills for making inferences about the other negotiator or seeing the implications of his behavior for theirs. (c) Only a short warmup period was employed. Perhaps our subjects had only a shaky

understanding of their own basic role and were, therefore, so preoccupied with this issue that they did not have the time or "psychic energy" to develop a clear picture of the other negotiator or the relevance of his behavior for their approach to the negotiation.

If anecdotal evidence is permitted, personal experience of one of the authors suggests that the third explanation may be correct. This experience involved learning a new two-person card game which was sufficiently different from others he knew to require a "warmup" period (during which the other player gracefully declined to keep score). At first, he attended only to his own behavior, learning how to arrange his cards so as to make an optimal series of melds. After mastering these skills fairly well, he suddenly realized that he should be watching the other player and trying to figure out what strategy that player was using. This insight led to additional warmup activity. If this anecdote has any generality, it may suggest that the subjects in the present experiment were still in the first stage of mastering the "solitary" features of their role. Only with additional warmup could they be expected to turn enough of their attention to the other negotiator to develop valid inferences about his behavior and its relevance to theirs.

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FOOTNOTES

¹This investigation was supported by Contract NONR-2285(02) from the Office of Naval Research. Part of the results are embodied in a masters thesis submitted by the second author to the University of Delaware.

²In the present experiment, this and other aspects of the negotiator's behavior are measured on his own scale.

³Only the minimal goal is measured in the present experiment.

⁴Bartos (1964) and Caggiula (1965), present research evidence that appears to support the common assumption that tougher bargainers end up with higher proceeds.

⁵A "trial" consists of the subject's offer and the "other negotiator's" counteroffer.

⁶Trials 1 and 2 were not included in this analysis, since the CR manipulation could not have an effect until trial 3. A separate analysis of variance for trials 1 and 2 revealed the same levels of significance for the same sources of variance. A logarithmic transformation was performed on the data for both analyses because of the departure of these data from normality and homogeneity of variance.

⁷Data from trial 2 were included in this analysis, since previous analyses had shown that the CR variable had little or no effect on demand or minimal goal.

⁸One might think from examining Figure 2 that CR had an effect on minimal goal under the mild TP condition, because the high CR line is somewhat above the low CR line. However, this difference is decidedly nonsignificant. Furthermore, it begins on trial 2, before manipulation of CR commenced.

⁹The fact that CR had an effect on the second trial in Figure 3 is not surprising, because the question about the other negotiator's minimal goal was included in the second questionnaire, which was answered after the other negotiator's second offer had been examined, and hence after the CR manipulation had begun.

¹⁰When the other negotiator's payoffs were known, level of initial demand was inversely related to the favorableness of the other's first bid; when unknown, these variables were directly related to each other.

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13 ABSTRACT Eighty students were run in a laboratory paradigm of negotiation resembling that employed by Siegel and Fouraker. Time pressure produced, on the first trial, less ambitious goals, lower levels of demand and less bluffing. Over the later trials, level of demand and amount of bluffing were reduced at a diminishing rate, but goals remained unchanged. Neither time pressure nor the other negotiator's rate of concession affected the rate of change in demand or bluffing over time. Several items of evidence suggested the presence of substantial wishful thinking about the other negotiator's goals.			

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